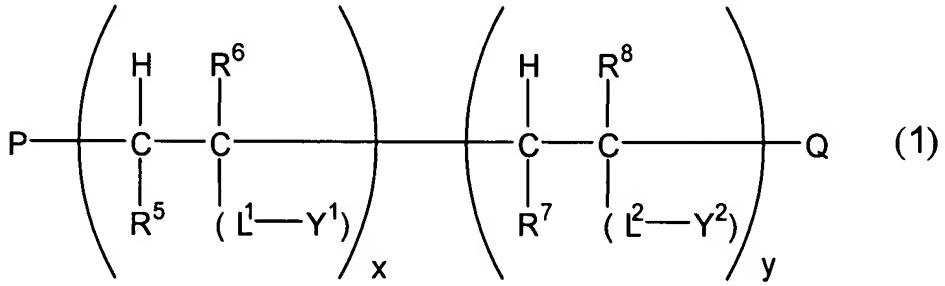
AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1-7. (canceled).

8. (currently amended): An~~A porous~~ insulating film formed by ~~using~~ thermally treating a film-forming composition comprising a hydrolysis product and/or a condensation product of a compound ~~having a repeating unit~~ represented by Formula (1) below:



(1)

~~(in the formula,~~ wherein at least one of P and Q is a silane coupling group represented by $-L^3-Si(R^3)_m(OR^4)_{3-m}$, R^3, R^4, R^5, R^6, R^7, and R^8 independently denote a hydrogen atom or a hydrocarbon group having 1 to 8 carbons, m denotes 0, 1, or 2, x denotes a range of 100 to 1 mol %, y denotes a range of 0 to 99 mol %, and P and Q denote terminal groups; L^1, L^2, and L^3 independently denote a single bond or a divalent organic linking group, Y^1 and Y^2 independently denote $-N(R^9)(R^{10})$, -OH, $-NR^0COR^9$, $-CON(R^9)(R^{10})$, $-OR^9$, $-CONR^9{}_2$, $-COR^9$, $-CO_2M$, $-COOR^9$, or $-SO_3M$, in which R^0, R^9, and R^{10} independently denote a hydrogen atom or an alkyl group having 1 to 8 carbons, R^0 and R^9 may form a ring structure, and M denotes a hydrogen atom, an alkali metal, an alkaline earth metal, or onium~~)~~.

wherein said insulating film is porous.

9. (currently amended): The ~~porous~~ insulating film according to Claim 8, wherein L^1 and L^2 in Formula (1) are single bonds and L^3 is an alkylenethio group.

10. (currently amended): The ~~porous~~ insulating film according to Claim 8, wherein the film-forming composition comprises a hydrolysis product and/or a condensation product of a compound represented by Formula (1) and at least one type of silane compound selected from the group consisting of a compound represented by Formula (2) below and a compound represented by Formula (3) below:

$Si(OR^{11})_4$ (2)

~~(in the formula,~~ wherein R^{11} denotes a monovalent organic group~~),~~

$R^{12}_aSi(OR^{13})_{4-a}$ (3)

~~(in the formula,~~ wherein R^{12} denotes a hydrogen atom, a fluorine atom, or a monovalent organic group, R^{13} denotes a monovalent organic group or an organosilicon group, and a denotes an integer of 1 or 2~~)~~.

11. (currently amended): The ~~porous~~ insulating film according to Claim 10, wherein R^{11} in Formula (2) is an alkyl group having 1 to 5 carbons.

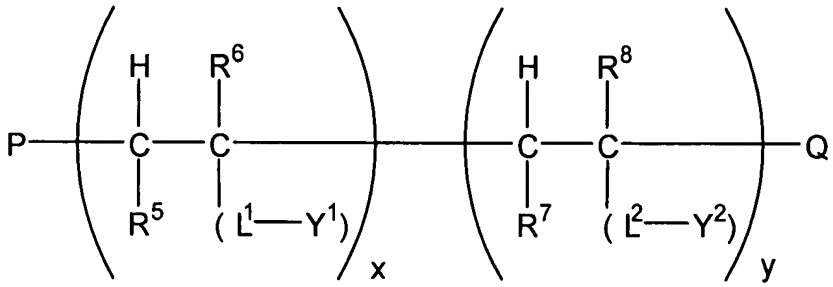
12. (currently amended): The ~~porous~~ insulating film according to Claim 10, wherein R^{12} and R^{13} in Formula (3) independently denote an alkyl group having 1 to 5 carbons.

13. (new): The insulating film according to Claim 8, wherein said film has a porosity of at least 20 vol% to at most 80 vol%.

14. (new): The insulating film according to Claim 8, wherein said film has a permittivity of 2.1 or less.

15. (new): A process for producing an insulating film, comprising the steps of

providing a film-forming composition comprising a hydrolysis product and/or a condensation product of a compound represented by Formula (1) below:



(1)

wherein at least one of P and Q is a silane coupling group represented by $-L^3-Si(R^3)_m(OR^4)_{3-m}$, R^3, R^4, R^5, R^6, R^7, and R^8 independently denote a hydrogen atom or a hydrocarbon group having 1 to 8 carbons, m denotes 0, 1, or 2, x denotes a range of 100 to 1 mol %, y denotes a range of 0 to 99 mol %, and P and Q denote terminal groups; L^1, L^2, and L^3 independently denote a single bond or a divalent organic linking group, Y^1 and Y^2 independently denote $-N(R^9)(R^{10})$, -OH, $-NR^0COR^9$, $-CON(R^9)(R^{10})$, $-OR^9$, $-CONR^9{}_2$, $-COR^9$, $-CO_2M$, $-COOR^9$, or $-SO_3M$, in which R^0, R^9, and R^{10} independently denote a hydrogen atom or an alkyl group having 1 to 8 carbons, R^0 and R^9 may form a ring structure, and M denotes a hydrogen atom, an alkali metal, an alkaline earth metal, or onium;

adding to the film-forming composition a porosifying compound that is compatible with or dispersible in the film-forming composition and has a boiling point or a decomposition temperature ranging between 250°C to 450°C, thereby forming a resulting composition;

coating a substrate with the resulting composition comprising the film-forming composition and the porosifying compound to obtain a coated substrate;

heating the coated substrate at a temperature that is less than the boiling point or the decomposition temperature of the porosifying compound so as to partially cure the resulting film-forming composition, and

subsequently heating the coated substrate at a temperature that is equal to or higher than the boiling point or the decomposition temperature of the porosifying compound so as to further cure the resulting film-forming composition while generating a gas as a result of boiling or decomposition to obtain said insulating film, wherein said insulating film is porous.

16. (new): The process of claim 15, wherein L^1 and L^2 in Formula (1) are single bonds and L^3 is an alkylenethio group.

17. (new): The process of claim 15, wherein the film-forming composition comprises a hydrolysis product and/or a condensation product of a compound represented by Formula (1) and at least one type of silane compound selected from the group consisting of a compound represented by Formula (2) below and a compound represented by Formula (3) below:

$Si(OR^{11})_4$ (2)

wherein R^{11} denotes a monovalent organic group,

$R^{12}{}_aSi(OR^{13})_{4-a}$ (3)

wherein R^{12} denotes a hydrogen atom, a fluorine atom, or a monovalent organic group, R^{13} denotes a monovalent organic group or an organosilicon group, and a denotes an integer of 1 or 2.

18. (new): The process of claim 15, wherein the porosifying compound is a compound having a polyalkylene oxide structure.